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## **Assessment of prevalence and knowledge of risk factors regarding hypertension among adolescents in selected schools at Puducherry**

**D Vishnu Priya, P Sumathy and K Renuka**

### **Abstract**

Children are vital to the nation's present and its future. Pediatric hypertension is a new emerging issue and of great importance. Early detection of children at risk for hypertension is important factor to prevent the serious, long-term complications in the future. With rapid urbanization, bringing more lifestyle modifications, adolescents are exposed to multiple risk factors including obesity, dietary changes, academic stress, lack of physical activity apart from hereditary risk factors etc.

A Quantitative research approach and Descriptive Cross- Sectional design, convenient sampling technique was adopted. A total of 520 adolescents in the age group of 13 to 17 years were selected based on inclusion and exclusion criteria. Questionnaire was administered to assess the knowledge level and Blood Pressure was monitored by using Standard Mercury Sphygmomanometer. Descriptive and Inferential statistics was used to analyze the data. About 147(28.3%) were having normal state of Blood pressure, 201(38.7%) were in the Pre-hypertension stage, 158(30.4%) had stage 1 and 14(2.7%) had stage II Hypertension. The above table indicates that out of 520 samples, most of them 384 (73.8%) had inadequate knowledge on risk factors of hypertension.

**Keywords:** adolescent, blood pressure, hypertension

### **Introduction**

Adolescents constitute the principle asset of the country and India covers the largest adolescents population (25%) in the world <sup>[1]</sup>. The wealth of the nation depends upon health status of the children. Adolescence is the period of life between 10 to 19 years. The period of transition from childhood to adulthood is hazardous for adolescent health, as they develop behavioral problems and unhealthy lifestyles which have its reflection in the form of various diseases in later life. One such disorder is essential hypertension, the risk factors of which have its initiation during childhood and adolescent <sup>[2]</sup>.

Cardiovascular diseases (CVD) are the leading cause of high morbidity and mortality across the world and more common among the adulthood period. India is the second most populous country in the world with emerging burden of cardiovascular related disease. In 1990, CVD accounted for 20% of death, with hypertension 60% and 40% are attributed to stroke. But now it has increased to 30% and cause 2 million deaths annually due to CVD in India <sup>[3]</sup>. Cardiovascular risk factors such as smoking, hypertension, hypercholesterolemia, metabolic syndrome and diabetes are the major risk factors contributing to CVD in India.

### **Need for the study**

Hypertension has now become a common disease affecting even adolescents and causing high morbidity and mortality. India is the second most populous country in the world with emerging burden of cardiovascular disease in country and it is alarming. Adolescents are more engaged in indoor activities due to computer, Internet, video game, high consumption of junk food and lack of physical activity make them more prone to many disease such as obesity hypertension, diabetic mellitus at an earlier stage. The younger the age of onset of hypertension, greater the reduction in life expectancy if the blood pressure is left untreated. Hypertensive children tend to cause other complication such as obesity, high blood lipids and diabetes mellitus. Lifestyle modification between the upper and lower socio-economic classes have an indirect bearing on blood pressure level.

Due to urbanization, socio-economic development and life-style modification from traditional to modern have led to physical inactivity and increased the chance of developing hypertension in later life.

The elevated BP in children and adolescents may be an early indication of essential Hypertension in adulthood.

**Statement of the problem**

“Assessment of Prevalence and Knowledge of risk factors regarding Hypertension among Adolescents in selected Schools at Puducherry”

**Objectives of the study**

- To assess the prevalence of hypertension among adolescents
- To assess the level of knowledge regarding risk factors of hypertension among adolescents
- To associate the knowledge of risk factors with selected demographic variables.

**Methodology**

**Research approach & design**

The research approach used for the study was Quantitative Research Approach and Descriptive Cross-sectional Research design was adopted.

**Sample**

Adolescents in the age group between 13 to 17 years, who fulfilled the inclusion and exclusion criteria were selected for the study.

**Sample Size**

The sample size for the study was 520 Adolescents from 2 Urban Schools in Puducherry.

**Development and description of tool**

The data was collected by using structured questionnaire and it includes

**Section –A**

This deals with demographic variables that include age, sex, religion, educational status of father and mother, etc.

**Section –B**

It consists of measurement of Hypertension by using Standard Mercury Sphygmomanometer

**Table 1: Blood pressure category**

Blood Pressure Category	Systolic mm Hg		Diastolic mm Hg
Normal	less than 120	And	less than 80
Prehypertension	120-139	Or	80-89
High Blood Pressure(Stage 1)	140-159	Or	90-99
High Blood Pressure(Stage 2)	160 or higher	Or	100 or higher
Hypertensive Crisis	Higher than 180	Or	Higher than 110

Source: American Heart Association (2010)

**Section- C**

It consists of structured questionnaire to assess the knowledge and risk factors of hypertension. It consists of 30 multiple choice questions. The correct answer was given a score one mark and each wrong answer was given a score of 0.

**Score interpretation**

- >75%- Adequate knowledge
- 75 - 50% – Moderately adequate knowledge
- <50% - Inadequate knowledge

**Data collection procedure**

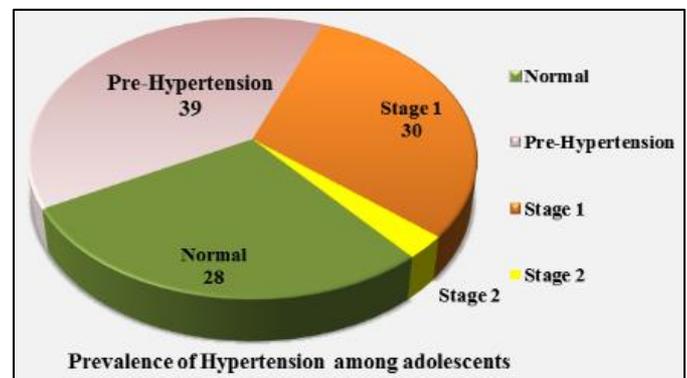
A formal permission was obtained from the principal of Blessed Mother Theresa Higher Secondary School, Nainarmandapam and Wiseman Higher Secondary School, Velrampet. The Adolescent who fulfilled the inclusion criteria, were selected by using convenience sampling method. After obtaining informed consent from the parents and assent from the adolescents, blood pressure was monitored and for student with high blood pressure another two consecutive readings was obtained with the time gap of 30min and the mean reading was considered as blood pressure reading. The questionnaire was administered to assess the level of knowledge regarding hypertension for 520 adolescents. The adolescents was given time limit of 45min to complete the test.

**Plan for Data Analysis**

Data was summarized with Descriptive (Frequency, Standard deviation, Mean) and Inferential Statistics (Kruskal Wallis Test).

**Section-A: Description of Demographic variables of adolescents in Frequency and Percentage.**

With regard to age group 138(26.5%) of adolescents were in the age group of 13 years and 51(9.8%) were in the age group of 17 years and majority of samples were males 316(60.8%) than the females 204(39.2%) and regarding educational qualification 68(13.1%) of fathers were graduates and 73(14.0%) of fathers had no formal education whereas mother had high school education 199(38.3%). Most of the fathers were Private employee and 224(43.1%) of the families had family history of Hypertension. With regard to dietary pattern majority of the adolescents were Non-vegetarians 348(66.9%) and 172(33.1%) were Vegetarians, 217(41.7%) had the habit of adding salt in diet and 209(40.2%) of adolescents consumed the junk food frequently, 118(22.7%) of adolescents consumed junk food sometimes and 153(29.4%) of adolescents engaged in physical activity frequently and 52(10%) of adolescents never engaged in physical activity.



**Fig 1: Measurement of Hypertension by using Standard Mercury Sphygmomanometer**

The above figure 4.2 shows that out of 520 samples 147(28.3%) were having normal state of Blood pressure,

201(38.7%) were in the Pre-hypertension stage, 158(30.4%) had stage I and 14(2.7%) had stage II Hypertension.

**Table 2:** Assessment of the Knowledge on risk factors regarding Hypertension among Adolescents

Level of knowledge	Level of knowledge	
	n	%
Adequate knowledge (>75%)	20	3.8 %
Moderately adequate knowledge (75-50%)	116	22.3%
Inadequate knowledge (<50%)	384	73.8%

The above table indicates that out of 520 samples, most of them 384 (73.8%) had inadequate knowledge on risk factors of hypertension, 116(22.3%) had moderately adequate knowledge and 20 (3.8%) had adequate knowledge. It can be inferred that most of the adolescent had inadequate knowledge on risk factors of hypertension.

### Results

The association between knowledge and demographic variables showed that there was significant association with mother and father's occupation, family type, dietary pattern, adding salt in diet and consumption of junk foods at ( $p < 0.005$  level). Other than that there was no significant association with demographic variables.

### Conclusion

The research study was done to assess the prevalence and knowledge of risk factors regarding hypertension among adolescents in 2 urban schools at Puducherry. The study sample was 520 samples. Thus, from this study, it is evident that factors such as family history, diet pattern, lack of physical activity, and sedentary lifestyles paved the way to overweight and obesity, and adolescent's period is the right time to cut off this epidemic as early as possible. Therefore, interventions should be planned including lifestyle changes and diet modification and equal priority to the adolescents of the community as well.

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